

# PATENT ABSTRACTS OF JAPAN

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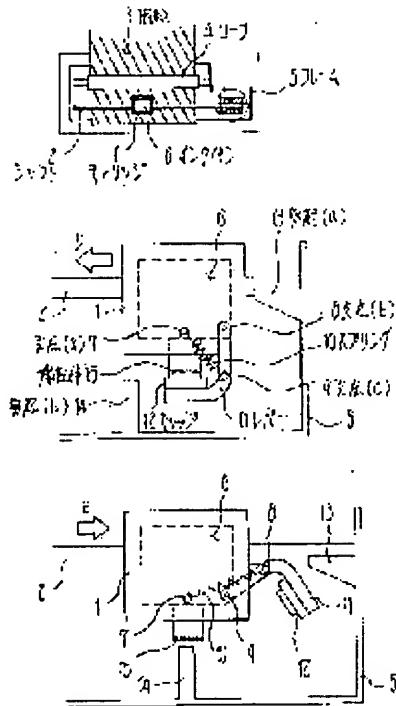
(22)Date of filing : 08.06.1992 (72)Inventor : SAKAMOTO TAKESHIGE

## (54) INK JET PRINTER

### (57)Abstract:

PURPOSE: To enhance the reliability of capping for drying and protecting the ink pen of an ink jet printer.

CONSTITUTION: An elastomer 15 is provided to the outer peripheral part of the nozzle surface of an ink pen 6 and a rigid cap 12 is provided to the leading end of the lever 11 supported on the fulcrum (b) 7 of a carriage 1 and energized by a spring 10. At the time of non-printing, the cap 12 closes the elastomer 15 and the nozzle surface (capping state). The lever 11 impinges against a projection (b) 14 by the movement in a D-direction at the time of printing to release the capping state. The lever 11 impinges against a projection (a) 13 by the movement in an E-direction after the completion of printing to restore the capping state.



## LEGAL STATUS

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**DETAILED DESCRIPTION**

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**[Detailed Description of the Invention]**

[0001]

[Industrial Application] Especially this invention relates to the structure of an ink pen about an ink jet printer.

[0002]

[Description of the Prior Art] Conventionally, this kind of ink pen was carried in carriage exchangeable, and the periphery part of the nozzle side which has many nozzles which carry out the regurgitation of the ink was made of the rigid object.

[0003]

[Problem(s) to be Solved by the Invention] In the ink pen in the conventional ink jet printer mentioned above, since the nozzle side periphery part had carried out the rigid object, the cap side which takes up a nozzle side consists of elastic bodies for protection of a nozzle side, and desiccation prevention of ink, and the fixed pressure which exists in order to raise sealing nature needed to be applied. Therefore, reservation of dependability was not easy when this elastic body carried out aging.

[0004]

[Means for Solving the Problem] The ink jet printer of this invention is equipped with the cap which comes whenever it blockades said nozzle side which is carried in carriage, and comes to prepare an elastic body in the nozzle side periphery part of an exchangeable ink pen, and contains said elastic body at the time of un-printing and cancels the lock out at the time of printing, and consists of a rigid object.

[0005]

[Example] Next, this invention is explained with reference to a drawing.

[0006] The top view of the capping condition which drawing 1 shows one example of this invention, (a) has carriage in the top view of a whole configuration, and (b) has in C location of this drawing (a), and (c) are the top views of the capping discharge condition of carriage, (a) which shows an ink pen [ in / in drawing 2 / this example ] is a top view, and (b) is a front view.

[0007] The ink pen 6 is carried in carriage 1 exchangeable. Carriage 1 moves to a longitudinal direction, showing around at a shaft 2, and prints with the ink pen 6 to the form 3 conveyed with a roller 4. The ink pen 6 of this example has come to prepare an elastic body 15 in the periphery part of the nozzle side 17 which has many nozzles 16 which carry out the regurgitation of the ink, as shown in drawing 2 . Moreover, as shown in drawing 1 (b) and (c), for protection of the nozzle side 17, and desiccation prevention of ink, in an elastic body 15 and the nozzle side 17, the wrap cap 12 is attached in the supporting point 8 on carriage 1 (b) at the point of the lever 11 by which rotation support was carried out, and a lever 11 is energized with a spring 10. furthermore -- carriage -- one -- migration -- a location -- corresponding -- a lever -- 11 -- operating -- making -- a sake -- two -- a \*\* -- a projection -- ( -- a -- ) -- 13 -- a projection -- ( -- b -- ) -- 14 -- a frame -- five -- preparing -- having -- \*\*\*\* .

[0008] Actuation of this example of such a configuration is explained. When not printing, the cap 12 completed with the rigid body through the elastic body 15 which carriage 1 was located in the C section of drawing 1 (a), and was prepared in the nozzle side 17 for desiccation of the nozzle 16 of the ink pen 6

and protection closes the nozzle side 17 (the actuation which takes up the nozzle side 17 with cap 12 is hereafter abbreviated to capping). Drawing 1 (b) shows a capping condition and drawing 1 (c) shows a capping discharge condition. printing -- not carrying out -- a condition -- capping -- a condition -- it is -- ink -- a pen -- six -- drawing 1 -- (b) -- being shown -- as -- carriage -- one -- attaching -- having had -- the supporting point -- (b) -- eight -- rotation -- the supporting point -- \*\* -- carrying out -- a lever -- 11 -- a tip -- attaching -- having had -- a cap -- 12 -- the supporting point -- (a) -- seven -- the supporting point -- (c) -- nine -- supporting -- having had -- a spring -- ten -- energization -- the force -- a nozzle -- a field -- 17 -- having prepared -- an elastic body -- 15 -- minding -- closing .

[0009] When printing, by moving in the direction of arrow-head D, a lever 11 is pushed up in projection (b) 14, and carriage 1 will be in the capping discharge condition shown in drawing 1 (c). Conversely, when printing is no longer performed by printing termination etc., carriage 1 moves in the direction of arrow-head E, and like drawing 1 (c), a lever 11 is depressed in projection (a) 13, and it restores it in the capping condition of drawing 1 (b).

[0010]

[Effect of the Invention] As explained above, it has the effectiveness that the high dependability of capping is securable by having considered as the structure where this invention uses the character of the article of consumption exchanged for an ink piece and coincidence, and an ink pen prepares an elastic body in the nozzle side periphery part of an ink pen, and it is exchanged for it easily [ while aging of an elastic body is small ] in it.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

[Drawing 1] The top view of the capping condition which shows one example of this invention, and (a) has carriage in the top view of a whole configuration, and (b) has in C location of this drawing (a), and (c) are the top views of the capping discharge condition of carriage.

[Drawing 2] (a) which shows the ink pen in this example is a top view, and (b) is a front view.

**[Description of Notations]**

- 1 Carriage
- 2 Shaft
- 3 Form
- 4 Roller
- 5 Frame
- 6 Ink Pen
- 7 Supporting Point (a)
- 8 Supporting Point (B)
- 9 Supporting Point (C)
- 10 Spring
- 11 Lever
- 12 Cap
- 13 Projection (a)
- 14 Projection (B)
- 15 Elastic Body
- 16 Nozzle
- 17 Nozzle Side

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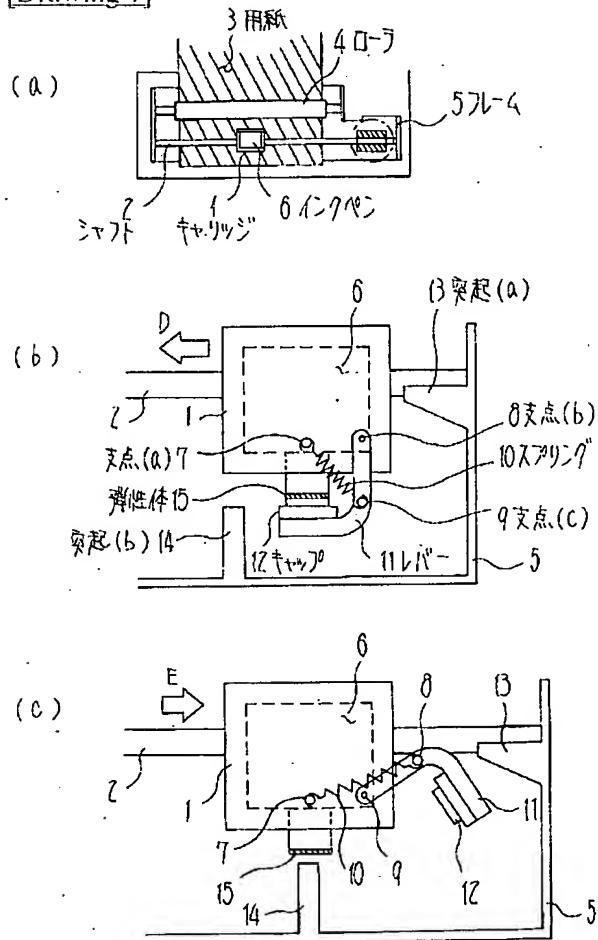
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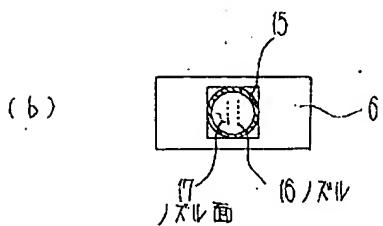
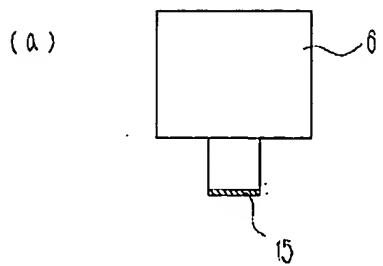
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## DRAWINGS

[Drawing 1]



[Drawing 2]



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